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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,434	02/03/2005	Jan Birnstock	5367-104PUS	9330

27799 7590 08/31/2005

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EXAMINER

RIELLEY, ELIZABETH A

ART UNIT PAPER NUMBER

2879

DATE MAILED: 08/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/500,434

Applicant(s)

BIRNSTOCK ET AL.

Examiner

Elizabeth A. Rielley

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 June 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 6/28/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Drawings***

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

A substitute specification excluding the claims is required pursuant to 37 CFR 1.125(a) because the number of changes renders it difficult to consider/understand the application.

A substitute specification must not contain new matter. The substitute specification must be submitted with markings showing all the changes relative to the immediate prior version of the specification of record. The text of any added subject matter must be shown by underlining the added

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text. The text of any deleted matter must be shown by strike-through except that double brackets placed before and after the deleted characters may be used to show deletion of five or fewer consecutive characters. The text of any deleted subject matter must be shown by being placed within double brackets if strike-through cannot be easily perceived. An accompanying clean version (without markings) and a statement that the substitute specification contains no new matter must also be supplied. Numbering the paragraphs of the specification of record is not considered a change that must be shown.

### ***Claim Objections***

Claim 7 is objected to because of the following informalities: it is unclear where the amorphous layer matrix material is located in the OLED. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 9-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 9-16 recite the limitation "the coating step" in independent claim 9. There is insufficient antecedent basis for this limitation in the claim.

Claims 10 and 13-16 recite the limitation "the forming polymer". There is insufficient antecedent basis for this limitation in the claim.

*Claim Rejections - 35 USC § 102*

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Imanishi (US 6828042).

In regard to claim 1, Imanishi ('042) teaches an organic light emitting diode (figure 1a; column 1 lines 8-17) with at least one organic layer which has refractive index inhomogeneities (4; column 16 lines 31-46; 31 and 30; figure 15a; column 27 lines 6-46), wherein the organic layer has at least one first partial region (31) and at least one second partial region (30) which comprise organic material (column 12 line 53 – column 13 line 29) and have different refractive indices, and the partial regions form a layer with a composite-like structure (column 27 lines 6-46).

In regard to claim 2, Imanishi ('042) teach the different partial regions are individual (see figure 15a). The limitation that the different partial regions are formed by separation of the applied layer material is considered a product by process claim. The patentability of the claim resides in the final product. Therefore, Imanishi's teaching of different partial regions are individual meet the recited limitation.

In regard to claim 3, Imanishi ('042) teach that the organic layer has a charge carrier transport material and or emitter material (31; column 27 line 27 line 6-46).

In regard to claim 9, Imanishi ('042) teaches a method for producing an organic light emitting diode (OLED) (figure 1a; column 1 lines 8-17) with at least one organic layer which has refractive index inhomogeneities (4;column 16 lines 31-46; 31 and 30; figure 15a; column 27 lines 6-46), characterized in that wherein the material of the organic layer is applied to a carrier in such a way that, during or after a coating step (column 13 lines 20-29), at least one first partial region (31; figure 15a) and at least one second partial region (30; figure 15) form in the layer, said partial regions having different refractive indices, and the partial regions form a layer with a composite-like structure (column 27 lines 6-46).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imanishi (US 6828042) in view of Von Hoene et al (US 4123269).

In regard to claims 4 and 12, Imanishi teach all the limitations set forth, as described above, except the organic layer has electrically inactive material. Van Hoene et al ('269) teach an organic layer has electrically inactive material (column 3 line 1-62) in order to protect the electrically active parts of the EL layer (column 2 lines 12-14). Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the OLED of Imanishi with the inactive material of Von Hoene. Motivation to combine would be to protect the electrically active parts of the EL layer.

Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imanishi (US 6828042) in view of Tyan et al (US 20040155576).

In regard to claim 5, Imanishi ('042) teach all the limitations set forth, as described above except the organic layer has at least two polymers with different refractive indices. Tyan et al ('576) teach an organic layer has at least two polymers with different refractive indices (paragraphs 4, 44-45) in order to improve luminous efficiency (paragraph 15). Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the OLED of Imanishi with the organic layers of Tyan et al ('576). Motivation to combine would be to improve luminous efficiency.

In regard to claims 6 and 8, the limitations of the regions produced by means of a local variation of chemical and or physical property and at least one of the properties varying by cross linking or branching density, and copolymerization are considered to be product by process claims. The patentability of a claim resides in the final product. Therefore Imanishi's teach of first and second partial regions of the EL layer is considered to meet the claimed recitation.

In regard to claim 7, Imanishi et al ('042) teach crystalline regions within an amorphous layer matrix material (column 10 lines 47 – 52).

Claims 10, 11, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imanishi (US 6828042) in view of Seo et al (US 20050170737).

In regard to claim 10, Imanishi ('042) teach all the limitations set forth, as described above, including the use of polymer layers as an organic electroluminescent layer. Seo et al ('737) teach forming the partial regions of an organic electroluminescent layer (303; figures 3a-3b) by a separation process wherein a mixture of soluble organic electroluminescent materials (303 and 306) in which at least two phases are produced (paragraphs 45-46) in order to lower the power consumption of the device (abstract). Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the method of manufacturing an OLED as taught by Imanishi with the separation process of Seo et al. Motivation to combine would be to lower the power consumption of the device.

In regard to claim 11, Imanishi ('042) teach all the limitations set forth, as described above except a charge carrier transport material and or emitter material is used for the organic layer. Seo et al ('737) teach a charge carrier transport material and or emitter material is used for the organic layer (paragraph 7) in order to lower the power consumption of the device (abstract). Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the method of manufacturing an OLED as taught by Imanishi with the charge carrier of Seo et al. Motivation to combine would be to lower the power consumption of the device.



In regard to claim 16, Imanishi ('042) teach all the limitations set forth, as described above except at least two different polymers are formed in the organic layer only during the coating method or thereafter by polymerization. Seo et al ('042) teach at least two different polymers (303, 306) are formed in the organic layer only during the coating method or thereafter by polymerization (paragraph 83) in which at least two phases are produced (paragraphs 45-46) in order to lower the power consumption of the device (abstract). Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the method of manufacturing an OLED as taught by Imanishi with the separation process of Seo et al. Motivation to combine would be to lower the power consumption of the device.

Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imanishi (US 6828042) in view of Seo et al (US 20050170737) and in further view of Chung (US 20050170075).

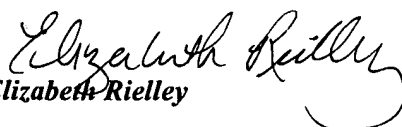
In regard to claims 13-15, Seo/Imanishi disclose all the limitations set forth, as described above, except the separation of the EL layers is brought about by the removal of a two solvents or two dispersants. Chung ('075) disclose a method of manufacturing an organic electroluminescent layers by the removal of a two solvents and/or two dispersants (claim 1; paragraph 25) in order to obtain a thin film with a more uniformed thickness. Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the method of manufacturing an OLED as taught by Imanishi/Seo with the method of manufacturing the EL layers as taught by Chung. Motivation to combine would be to obtain a thin film with a more uniformed thickness.

***Conclusion***

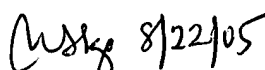
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth A. Rielley whose telephone number is 571-272-2117. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**Elizabeth Rielley**

***Examiner***  
***Art Unit 2879***

  
**MARICELI SANTIAGO**  
**PRIMARY EXAMINER**